
Tennessee's Most Common Misunderstandings About Forestry and Wildlife Management

Tennessee is blessed with diverse forests that support a variety of wildlife and other natural resource benefits including valuable forest products. Forest landowners, with the help of foresters, can improve wildlife habitat while improving their timber.

Here are the most common misunderstandings about forest management, timber production and wildlife habitat:

Misunderstanding #1: Tennessee has Extensive Areas of Virgin Forest

Tennessee has only small remnants of virgin forest, such as Porter Flats in the Smokies, Savage Gulf State Natural Area, and a small tract of land owned by the University of the South. Much of Tennessee, including steep hills, was farmed at one time or another. The rest of the forest was cut, often repeatedly, for timber. For example, the entire range of eastern mountains was clearcut between 1904 and 1938, and millions of acres in the West Highland Rim were repeatedly cut for charcoal to feed iron furnaces.

Misunderstanding #2: We are losing forest

Cutting of the forest trees rarely, if ever, eliminates the forest itself. It is true that Tennessee is losing forest to urban development. Losses from development are more than made up for by natural reversion of old farmland to hardwood forest as well as widespread reforestation projects. Today we have 14.4 million acres of forest – 50% more than in 1900. Over 55% of the Tennessee's 27 million acres are forested.

Misunderstanding #3: Tennessee's Forests are Being Overcut.

According to 1999 data, Tennessee's forests were growing twice as much wood as was being harvested. This trend is expected to continue.

Misunderstanding #4: Cutting Only Big Trees Gives Younger Trees Room to Grow and Become More Valuable.

Many people think that the best way to harvest timber is to cut the big trees and let the little trees grow. This assumes that small trees are young and big trees are older. But in many cases large trees and smaller midstory trees are about the same age. The larger trees grew faster.

Cutting only the largest and best trees, called "high grading", is a poor forest management practice. This practice leaves the forest less valuable – comprised of slow

growers, crooked, rotten, less desirable species, etc. – as the future resource. A conscientious landowner should never allow “high grading”. This is like a dairy farmer selling his best milk producers and keeping the inferior cows for breeding and milking.

There are preferred alternatives to high grading. One alternative is to harvest all the trees. This benefits wildlife immediately by producing browse, insects and hiding cover. It benefits wildlife in the long term by favoring regeneration of oaks, which will provide heavy mast as they mature into peak mast producing age. It also benefits future timber production by providing the full sunlight that many valuable timber species need and allowing the fastest growing trees to form the future stand. Another alternative is to cut the worst, poorest trees first. Leaving the best trees will continue to increase timber value and maintain wildlife benefits rather than degrading these values by “high grading”.

Misunderstanding #5: Clearcutting Timber is Bad for Wildlife

Clearcutting is the cutting of all trees within a designated area of forest (as a general rule it is a contiguous area with minimum size twice as wide as the height of surrounding trees). It is a valuable technique for both timber regeneration and wildlife management.

Clearcutting benefits timber production by allowing the reproduction and growth of a wide variety of species, including those that demand full sun, such as yellow-poplar, oak, walnut, and ash. This is important, since these shade-intolerant species are some of the most valuable and fastest growing. Their reproduction is not possible using partial cutting methods alone. Clearcutting eliminates low quality and slow-growing trees that interfere with the regeneration of shade-intolerant species.

Clearcutting benefits wildlife by providing plentiful browse, cover, space, and other habitat. It also increases habitat diversity and edge, a valuable habitat component for many species, by providing young forest next to older forest.

The optimum size of a clearcut for wildlife depends on the species being considered and the shape of the clearcut. A general rule of thumb for benefiting wildlife species is 10 to 25 acres but some may be as large as 40 or 400 acres. Some species, such as the neotropical migrant prairie warbler and yellow-breasted chat, prefer very large clearcuts. The Bobwhite Quail requires newer clearcut acres for its long term survival in much of our Tennessee forest.

Large clearcuts are more efficient and economical to manage for timber production than many small clearcuts. Large clearcuts also minimize forest edge, where shade interferes with reproduction and growth of young trees. Edge trees are exposed to sunlight on their trunks causing undesirable growth of new branches that degrade log quality. Large clearcuts should be designed and marked on the ground by an experienced, professional forester.

Misunderstanding #6: Clearcutting Harms Streams and Fish Habitat by Causing Erosion

Clearcutting is no more apt to cause erosion than any other method of cutting or harvesting timber. Any method of timber harvest can risk erosion if done improperly. Use of simple guidelines called Best Management Practices, or BMPs, can minimize or prevent erosion and keep sediment from entering streams. Sediment caused by timber harvest occurs only where poorly designed roads and skid trail cross or come too close to streams. This is easy to avoid using BMPs to guide harvest planning and timber removal.

Most of a harvested area retains its protective litter layer and root mat, which prevent the soil from washing and filter out sediment that washes off roads and skid trails. Research has shown that if sufficient space is left between roads and streams, and if streams are crossed properly, little sediment will enter the stream as a result of timber harvest.

The potential for erosion is actually greater when conducting periodic selection cutting rather than clearcutting. More roads, landings and skid trails must be constructed over a larger area in order to remove the same volume as would be harvested from a smaller area of clearcut. The shorter harvest cycle for selection cutting requires more frequent reentry and disturbance of roads and trails.

Misunderstanding #7: Pine Forests are Biological Deserts and Offer Nothing for Wildlife.

Properly managed, most life stages of a pine plantation can be very beneficial to wildlife. A pine stand can add diversity to a hardwood forest and provide better shelter for wildlife than a hardwood stand. For many years after planting, depending on the initial seedling spacing, a wide assortment of grasses, forbs, and browse provides an abundance of food for wildlife. A wide variety of animals use young pine plantations, including deer, turkey, quail, hawks, and certain migratory songbirds.

Starting at age 15 to 25, a pine stand should be thinned to increase timber yield and quality and to benefit wildlife. A lot of sunlight strikes the floor of a thinned pine forest, and this allows the growth of a variety and abundance of wildlife foods. Use of prescribed fire can also benefit wildlife by opening up the forest floor and allowing the growth of tender nutritious browse.

Pine plantations can provide good wildlife habitat for most of their lives, but to do so they must be managed, primarily through use of timely thinnings and prescribed fire. Even unmanaged stands are forests and provide many general forest benefits.

Misunderstanding #8: Hardwoods are always the best choice for timber and wildlife production

Not all forest sites are highly productive for either timber or wildlife – over half, according to a US Forest Service estimate. Good sites produce fast-growing, tall, straight trees with few limbs, and lots of wildlife food. Poor sites, usually found on ridges and

south and west slopes, produce slow-growing poor quality hardwood timber and much less wildlife food.

Pine can produce a fast growing, valuable crop on sites where hardwoods do poorly. Pines, if properly managed, are far from being a “wildlife desert” (see myth #7). Pine forestland owners in hilly country commonly grow pine on ridges and manage for hardwoods in the drainages, where the best sites are. This diversifies wildlife habitat and provides the best use of the land for profitable timber production.

Misunderstanding #9: Foresters are Converting All Our Hardwood Forests to Pine

Planted pine acreage amounts to only 2 to 3% of the forest area in Tennessee, or about 400,000 acres out of a total of 14,400,000. The total acreage of pine plantation changed very little between 1989 and 1999 (the latest figures available.) We will never have a high percentage of pine forest in Tennessee.

Misunderstanding #10: All Hardwoods are Good for Wildlife

Many hardwoods make excellent wildlife habitat, but some individual tree species are of lesser value. These include cottonwood, sycamore, sourwood, hornbeam and hophornbeam, bitternut hickory and, with some exceptions, elm, ash, maple and yellow-poplar. Higher wildlife benefits tend to be equated to trees bearing nutritious food such as acorns, berries and other desirable seeds and fruit.

Misunderstanding #11: If Plenty of Mast-Producing Oaks are Present, There is No Need to Provide Other Food for Wildlife

“Mast” is a collective term for the fruit of forest plants used by wildlife. “Hard mast” consists of nuts including acorns, walnuts, beechnuts, and hickory nuts. “Soft mast” includes dogwood berries, wild cherries, persimmons, maple seed and the soft fruits of many other species.

Many animals rely on acorns as one of their main food sources yet acorns are not available all year; and yields of acorns are sporadic. Animals must have other foods, such as browse for deer and insects and seeds for turkeys. These other food sources are just as important as acorns.

A variety of year-round food sources is most available in a diverse intensively managed forest. Every management activity affects wildlife and the food supply. Clearcut areas where timber is regenerated provide excellent year-round deer browse and forage. They also furnish fruit, seed, and insects needed by turkeys, quail, and many other birds. When such areas are interspersed among forested areas of varying age and size, they provide access to food and cover needed by practically all species of wildlife. Areas in which adequate food, cover, and water are provided on a continuous basis will attract and retain wildlife indefinitely. Harvesting and regenerating oaks will assure a supply of oaks of seed bearing age (25 to 80 years) for the future.

Additional forest management practices that enhance wildlife habitat include periodic thinning and prescribed burning, both of which give rise to nutritious browse, forbs, grasses, and a diversity of seed bearing plants. Since all forest environments exist in a constant state of growth and change, harvest cutting, thinning, and prescribed burning must be conducted occasionally to maintain habitat quality.

Misunderstanding #12: Fire is Bad for Wildlife.

Prescribed fire can benefit wildlife, especially if combined with thinning or harvest. Research has shown that burning can result in more than a five-fold increase in available wildlife food. Prescribed fire is a delicate (and dangerous) tool. Used properly, it will keep browse (brush and hardwood sprouts) within reach of deer and will stimulate the growth of nutritious forage plants. Quail and turkey also benefit because heavy brush is removed and seed-producing plants are encouraged to grow. Prescribed fire is usually not recommended in certain hardwood stands if timber production is an objective. It is best to consult an expert before burning.

Misunderstanding #13: Herbicides Harm Wildlife

The herbicides used in forestry today have low toxicities to humans and animals, most of them less than the same amount of table salt or aspirin. Virtually no carcinogenic effects have been shown from today's herbicides.

Most herbicides bind to soil particles or plant tissues and tend not to move. Many break down quickly and persist for short time on the targeted soil or plant. They are applied in extremely low volumes – only a few ounces or pounds per acre. They are applied infrequently, only at the beginning of the planting/harvest cycle, which is only occasionally even in the most intensively managed forests.

The state and federal government have stringent requirements for applying herbicides. All herbicides must go through a testing and licensing process. They must be applied according to detailed instructions by trained and licensed applicators. Regulatory agencies and inspectors monitor herbicide handling and application to insure public and environmental safety.